

REMARKS

In the above-identified Office Action, Claims 73 and 74 were allowed, while Claims 71 and 72 were merely objected to as depending from a rejected claim. By this response Claim 71 has been amended to independent form to include all of the limitations of Claim 68 from which it originally depended. Accordingly, Applicants respectfully submit that Claim 71 is now in condition for allowance, along with Claim 72 which depends therefrom. Also, Claim 70 has been amended to depend only from allowed Claims 73 and 74, and allowable Claims 71 and 72, wherefore it is believed that Claim 70 is also in condition for allowance.

Accordingly, Applicants submit that the only claims now in contention are independent Claim 68, and Claim 69 which depends therefrom. Reconsideration of the allowability of newly amended Claim 68, and its dependent Claim 69, is respectfully requested for the reasons given below.

Claim 68, as amended, is directed to a process which requires a step of "using the plurality of temperature detectors to detect the temperature distribution across said first plane of the crucible". Applicants respectfully submit that the Kennedy reference, relied upon in the Office Action as disclosing such a process step, does not use "a plurality of temperature detectors provided at the bottom of" a crucible as now required in Claim 68. Accordingly, the disclosure in the Kennedy reference does not disclose and cannot be used to detect a temperature distribution across a plane in a crucible as also required in Claim 68. Instead, the Kennedy reference merely implies the use of some feedback mechanism such as an imaging device for sending a signal to a furnace unit to control the temperature in two sections, 10H and 10C, of the furnace. However, Kennedy in no case discloses or even suggests a plurality of temperature

detectors provided at the bottom of a crucible for detecting a temperature distribution as now required in amended Claim 68, nor a process step of using that plurality of temperature detectors to detect the temperature distribution across a first plane of the crucible.

A review of the secondary references relied upon in the Office Action, namely, the Mizugaka and Yamazaki patents, reveals that they do not overcome the above-discussed deficiencies of Kennedy as a rejecting reference. That is, neither of those references disclose the use of temperature detectors for detecting a temperature distribution across a first plane of a crucible. Particularly, the Mizugaka patent does not disclose or suggest a plurality of temperature detectors provided at the bottom of a crucible and used to detect a temperature distribution thereat. Similarly, Yamazaki discloses a thermocouple at a center bottom portion of the crucible, but that single thermocouple, which is used with a cooling means for uniformly cooling the bottom of a crucible, cannot be used to detect a temperature distribution across a first plane of the crucible.

In view of the absence of any disclosure in the prior art of a use of a plurality of temperature detectors for detecting a temperature distribution across a plane of a crucible, it will be appreciated that the Kennedy patent, the Mizugaka patent, and the Yamazaki patent, taken singly or in combination, also fail even to suggest the last clauses of Claim 68. Those clauses require controlling a heating means and a cooling means such that the detected temperature distribution across a first plane of a crucible can be maintained so that a temperature almost at the center of that crucible plane is minimized. Applicants submit that this claimed requirement alone renders the claims patentable over the references.

For all these various reasons it is believed that amended Claim 68 and its dependent Claim 69 are also in condition for allowance, along with the previously allowed Claims 73 and 74 and the now allowable Claims 70-72. Accordingly, the issuance of a formal Notice of Allowance is respectfully solicited.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

  
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